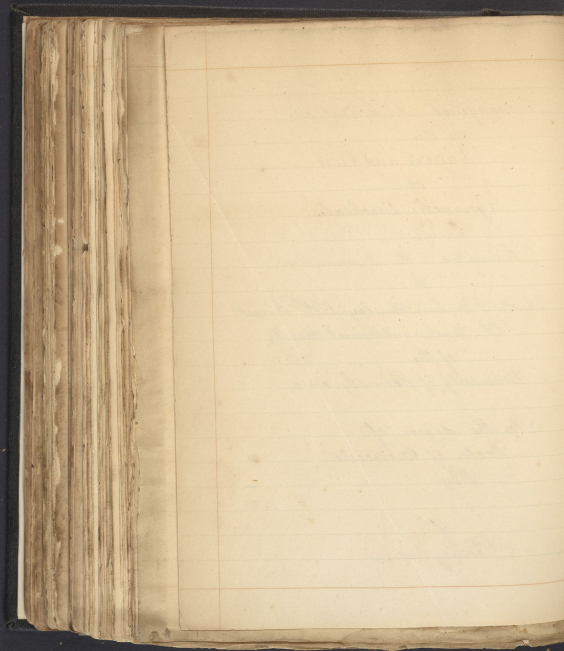


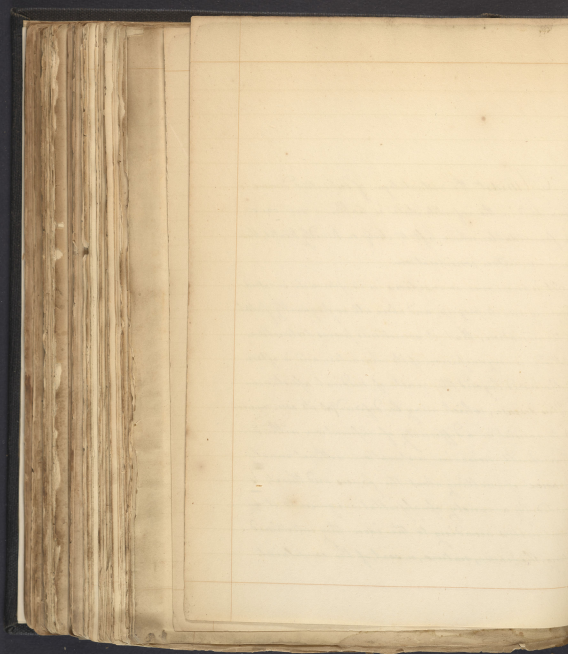
An
Inaugural Dissertation,
on the
Nature and Cure
of
Synanche Trachealis,
or
Croup.
Submitted to the Examinations
of
The Rev^d Frederic Beasley, L.L.D. Provost,
The Trustees and Medical Faculty
of the
University of Pennsylvania
For the degree of
Doctor of Medicine
By
of
Pennsylvania



Amidst the vast catalogue of destructive diseases, to which mankind in the infantile state is liable, no one is more formidable when left to itself or timidly treated, than the one now under consideration.

It is moreover so insidious in its approach, so rapid and alarming in its progress, and above all so frequently fatal in its termination, that it sometimes proves destructive before there is any suspicion of its character, and is often when discovered beyond the reach of medical assistance.

This disease, which may be defined (at its commencement) to consist in a difficulty of respiration with a peculiar shrill noise in inspiration, without much appearance of swelling about the fauces and throat, is designated by a variety of appellations given to it by different writers according to the ideas they entertained respecting the cause, nature, or seat, of the complaint.

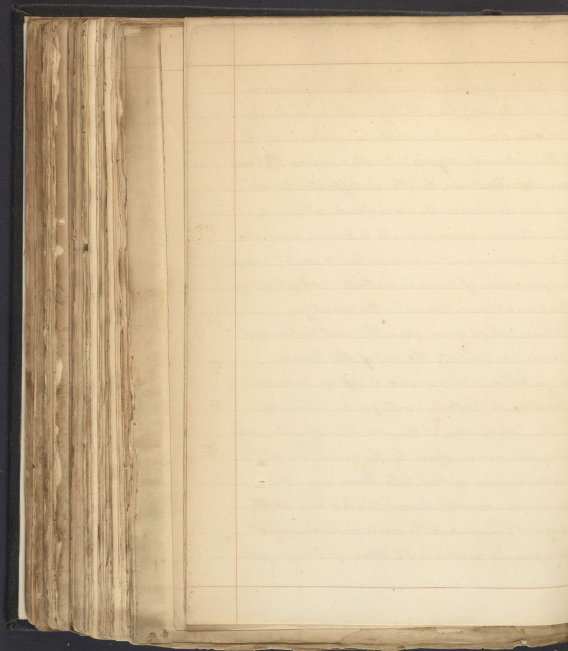


Doctor Cullen (by whom it was considered as an inflammatory affection of the trachea) has called it *tyrannus trachealis*. By Dr. Michaelis (from an idea which he entertained of its being of the nature of polypus,) it is stiled *angina Polyposa*; Dr. Home describes it under the title of *stiffocatio stidula*. It has also been noticed under the name of acute asthma by Dr. Miller, *Pneumonia trachealis* by Darwin, *tracheitis* by a writer whose name I do not recollect, &c. &c. It is known by the vulgar name of croup in Scotland, *chock* or *stiffing* in Ireland, and *Hives* or *Hleas*, in this country.

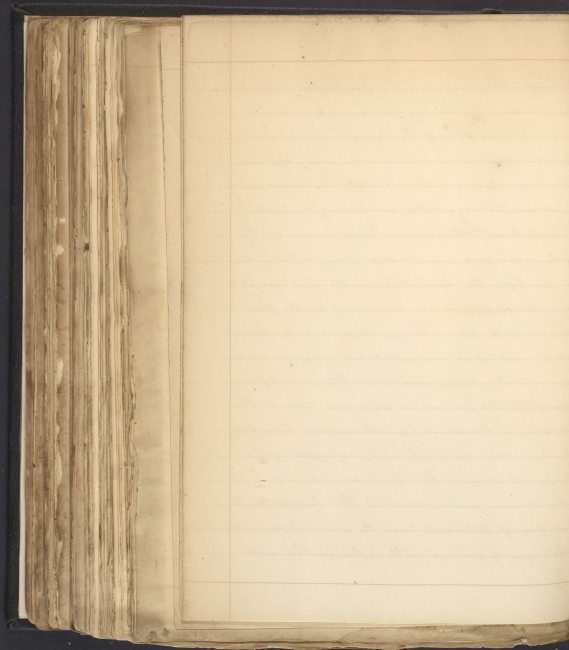
Of these perhaps *tracheitis* is the most proper, as it denotes more particularly the seat of the disease.

"To change however is always more or less an error, and in no instance is it attended with greater disadvantages than in the technology of the sciences." I therefore prefer continuing the name given by Doctor Cullen, as it is much better known by that title than any other.

Croup has been considered though I believe erroneously, as an original disease, and the credit of having first noticed it is generally ascribed to Dr. Home of Edinburgh;



But Professor Chapman observes in his lectures on the
practice of medicine, in turning over the leaves of an old
volume of the Transactions of the Royal Society of London,
I find well authenticated by dissections the writer continues
he "who was an obscure practitioner describes it as a new
disease appearing at Manchester, and proving particularly
fatal to children." There are other proofs however of the
disease being of a more ancient date. Though it may have
existed long before that period I believe the first regular
history of the complaint was published by Martin Ghisli.
an Italian writer about the year 1749. In 1767, a graduate
at Upsall published an account of two cases, and about
the same period a paper appeared on this subject from
the pen of Dr. Bergen, which was a year prior to the
publication of Dr. Blom's Essay. I mention these facts
as they stand upon record, with a view of exposing the
fallacy of the opinion that the disease is a new one,
and I will even venture to assert, that by referring to
the writings of Hippocrates and the commentaries upon
his Aphorisms by Galen, it will be found that even

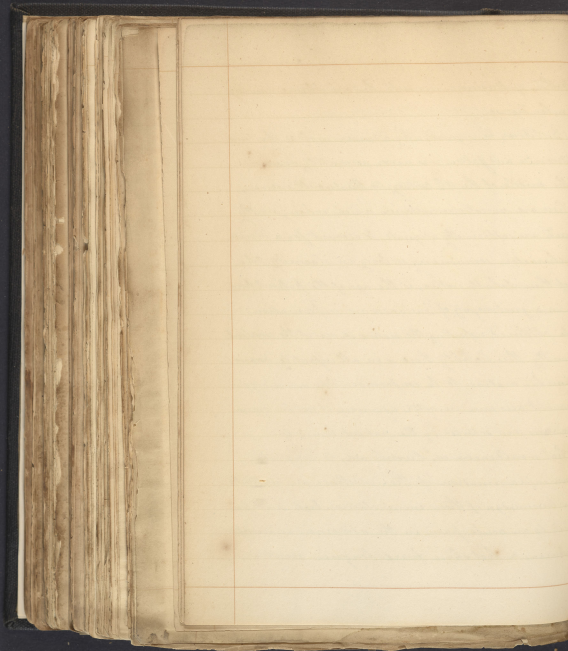


the Father of Medicine himself had an obscure knowledge of a similar disease.

But it may be enquired, why a disease as old as the time of Hippocrates and Galen, was never accurately described until the middle of the 18th century. To this I would answer, that there are several circumstances, which when jointly considered, are sufficiently adequate to account for a disease of this character, remaining so long in obscurity. The first of these I shall notice, is the age of the patient, from which in a great majority of instances no information could be obtained, respecting the nature or seat of the complaint.

Secondly the liability there is in all infantile diseases of a similar nature to be confounded. The same difficulty might also arise, in after life were it not for some circumstances best detailed by the patient himself.

What would enable us, I would ask, to designate between inflammation of the intestines and peritonitis but a knowledge of those circumstances. Each is alike attended by an acute pain in the abdomen increased by pressure, a hot skin furred tongue, great--



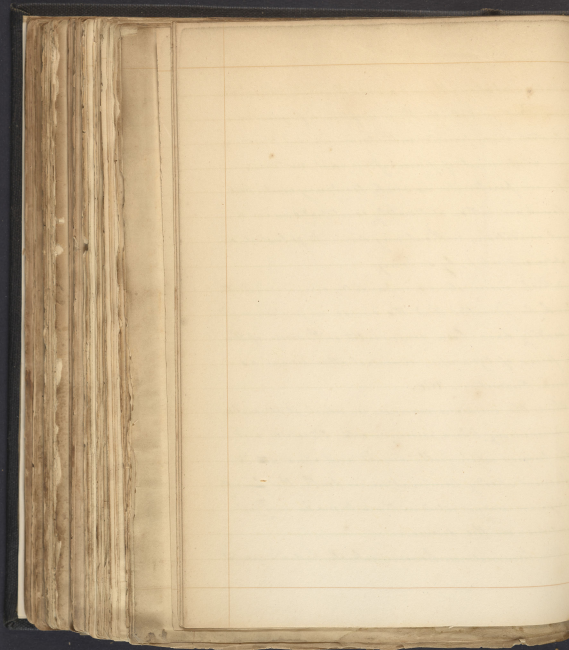
prostration of strength, and a small, quick, and corded pulse. But in enteritis there is often a frequent desire to go to stool, accompanied with tormina and tenesmus, and an abatement of pain after each motion;

While in peritonitis no such tendency exists; here the bowels are either obstinately constipated or in a natural condition, without any desire to go to stool, or any apparent relief by so doing.

Such circumstances impartially considered, it will I think be admitted that the disease in question might very readily have been confounded with some of the other forms of typhus, or several other diseases as Asthma Infantum &c.

Third: The insidious manner in which it approaches, often commencing like a common cold; its rapid and terrific progress when fully formed, and above all its too frequent speedy termination in death, that frequently the physician was not called in time to make any just observations on the disease.

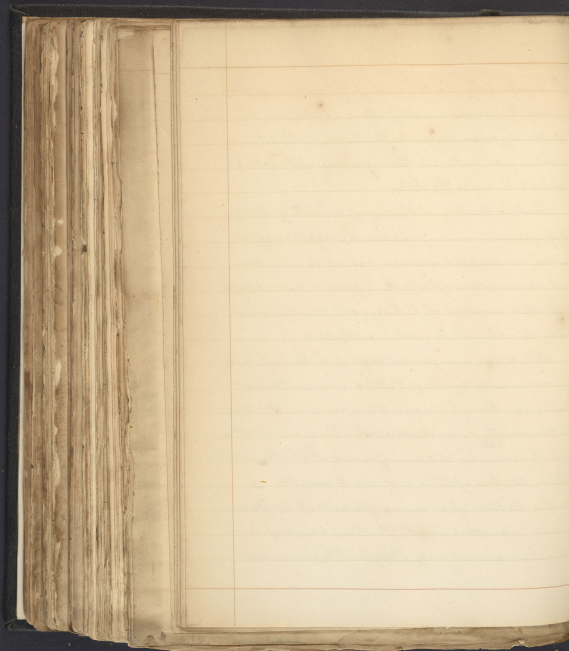
The circumstances however which had the greatest



weight in retarding the discovery of the nature of this disease, were the aversion which then existed, on the part of the physician, as well as the public, to the examination of bodies after death, and their ignorance of the appearances of parts in a healthy state.

But fortunately for the cause of humanity, that dark period of ignorance and superstition has passed away, and a new Era in medical science has arrived, when from frequent examinations after death, physicians have at length arrived at that correctness of pathology and practice, which could only be obtained by such investigations.

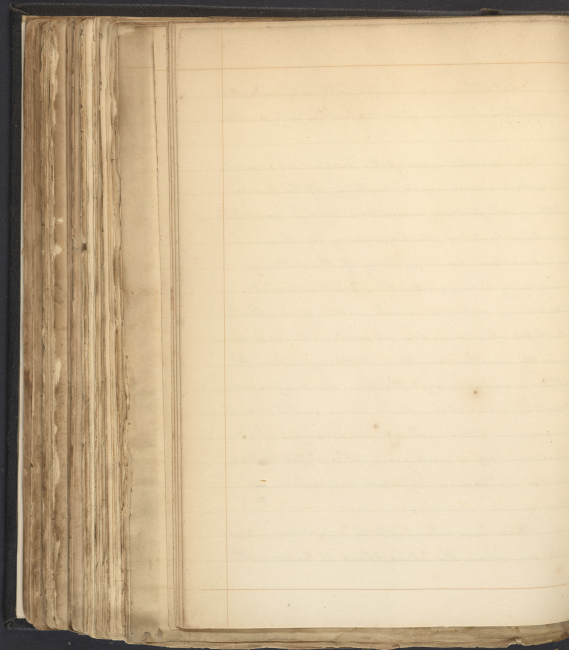
This disease is in general confined to the early period of life, most usually making its attack between the first and second years, though it sometimes occurs in children within the month, or in persons who have arrived at the age of puberty; I am informed that the late Dr. Adam Sedgwick of this city use to mention a case in his lectures of a man upwards of 40 years of age who was attacked with it. Several cases of a similar nature are noticed by Professor Chapman, and



it is a fact I believe now sufficiently established, that the illustrious founder of our republic, fell a victim to it.

The remote causes of this disease are generally divided into predisposing, and exciting; Of the former very little is satisfactorily understood; they have been referred to a certain period of life, viz. Infancy, together with a gross or robust habit of body. Of the latter or exciting, may be enumerated a damp or moist atmosphere, exposure to cold, and in fact all the vicissitudes of a variable climate. It occurs most frequently in the winter and spring, when the weather is variable, and therefore we may infer that cold and moisture have some influence in producing it. Though no one considers it at the present day, as contagious, it is stated to have prevailed epidemically, upon very respectable authority.

It has been observed to be most prevalent near the sea, where the atmosphere is loaded with



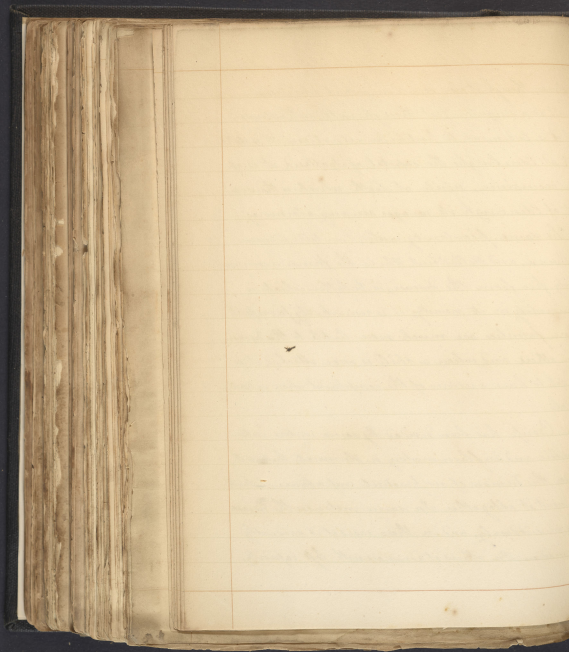
moisture, though it also occurs in inland situations.

It is a singular fact though well authenticated, that it is endemial to particular situations. It is stated that at Edinburgh the capital of Scotland, it is of rare occurrence, while at Leith which is the seaport of Edinburgh its ravages are very alarming.

The same peculiarity existed (I am told) between Baltimore, and Bulls Point. While the former is comparatively free from the disease, in the latter which is immediately in its vicinity, it is remarkably prevalent.

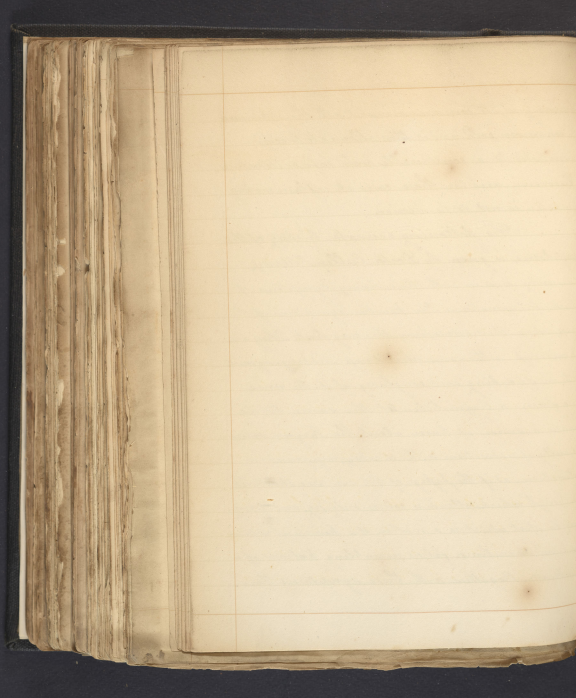
Some families are much more liable to this disease than others, and when a child is once attacked, it is very apt to have a return of the complaint upon exposure to cold.

Croup has been divided by some writers into spasmodic and inflammatory or humoral, but as I consider this division of no practical importance, I shall here omit it altogether. In some instances the disease comes on suddenly, and in those cases it is evidently Spasmodic. In others it advances with less rapidity,



assuming at its commencement, all the appearances of a common cold, and is thus allowed to proceed unmolested to a considerable height before its nature is discovered, and in those cases its inflammatory character is not to be denied.

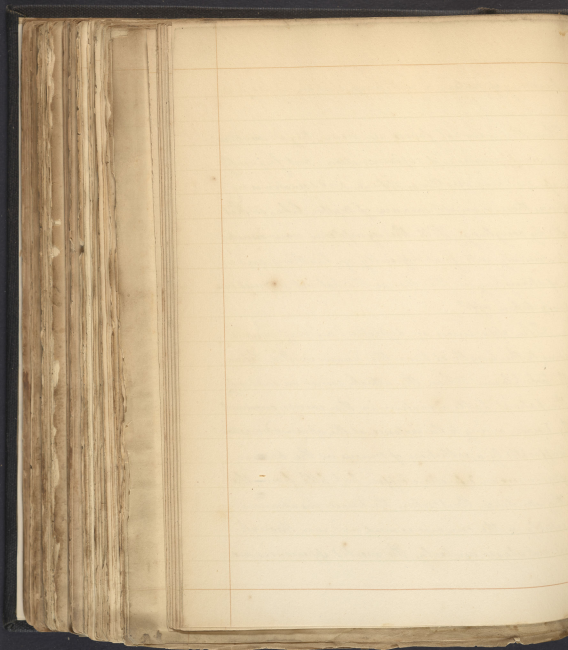
The following accurate history of the symptoms, is given by Doctor Cullen. "It very commonly comes on with the ordinary symptoms of catarrh, but sometimes the peculiar symptoms of the disease show themselves from the very first. They are, a hoarseness, with some shrillness and ringing sound both in speaking and coughing as if the noise came from a dragon tube. At the same time there is a sense of pain about the larynx, some difficulty of respiration, with a whizzing sound in inspiration, as if the passage of the air were shattered. The cough which attends is commonly dry; and if any thing be spit up, it is a matter of a purulent appearance, and sometimes films resembling portions of a membrane. Together with these symptoms there



is a frequency of pulse, a restlessness, and an uneasiness of heat.

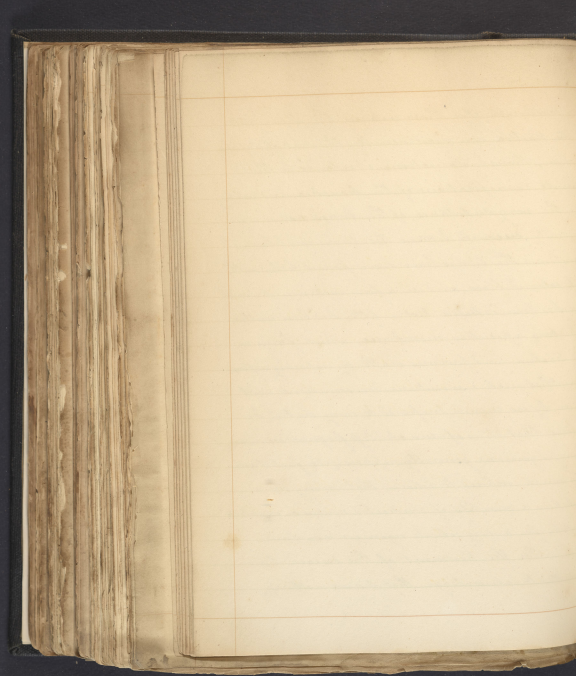
When the internal fauces are viewed, they are sometimes without any appearance of inflammation: but frequently a redness and even swelling, appear; and sometimes in the fauces there is an appearance of matter like to that rejected by coughing. With the symptoms now described, and particularly with great difficulty of breathing and a sense of strangling in the fauces, the patient is sometimes suddenly taken off."

The appearances on dissection are very various, according to the length of time the disease existed, before death took place. When the attack comes on suddenly, and the patient falls a victim in the commencement of the disease, owing to the violence of the spasmodic action, or is suffocated by a collection of mucus in the trachea, the appearances on dissection differ but little from the healthy structure. But when the disease has advanced less rapidly in the commencement and run through its different stages regularly, the morbid appearances are



very considerable. In those instances the upper parts of the trachea are most usually the seat of inflammation, though sometimes it extends to the minute ramifications of the bronchia, and even into the very substance of the lungs. Adhesions are frequently discovered between the lungs and pleura; sometimes the lungs have been found filled with dark coloured blood, and in a few instances it is said pus has been detected. Not a little has been written respecting a peculiar membrane, which forms in the trachea and produces death by impeding respiration. That such a membrane does sometimes exist I am by no means prepared to deny, but I do believe that it is of much less frequent occurrence, than physicians generally suppose; In fact I am very much inclined to believe, that many have mistaken a quantity of compacted mucus or coagulated lymph, for a very delicate organized membrane.

In the treatment of this disease I am compelled to acknowledge, that I have nothing



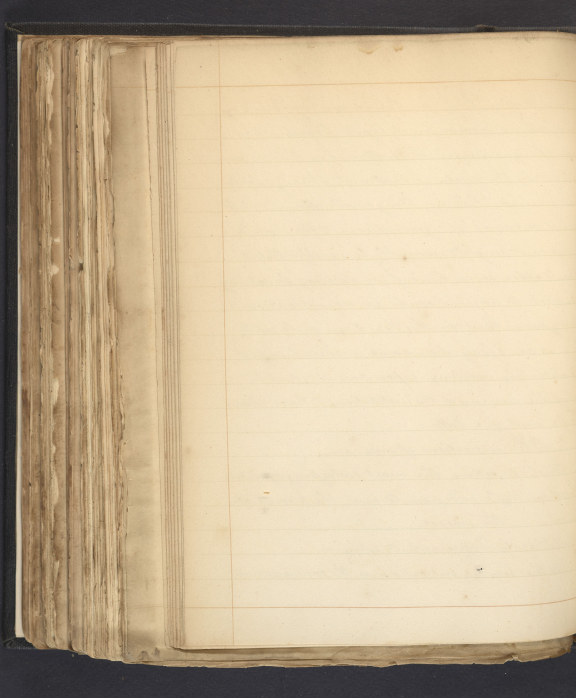
original to offer. But even this (however degrading to my
pride) does not occasion much regret, because it is so
successfully managed when attacked in the circum-
stance by the mode of treatment already adopted,
that even if I had any thing new to offer it might
almost be deemed wholly superfluous. After such a
confession it might reasonably be expected, that I
should offer some kind of an apology for selecting
a subject, to which I could add no improvements
of my own. But on this head I can only reply
that as an Essay upon some medical subject
was absolutely necessary, before I could expect to
receive the honours of this institution, I have chosen
this for want of a better.

The indications of cure are,

First, to relieve the most distressing symptoms
Secondly, to endeavour to arrest the progress of
the disease,

and Thirdly To prevent its return.

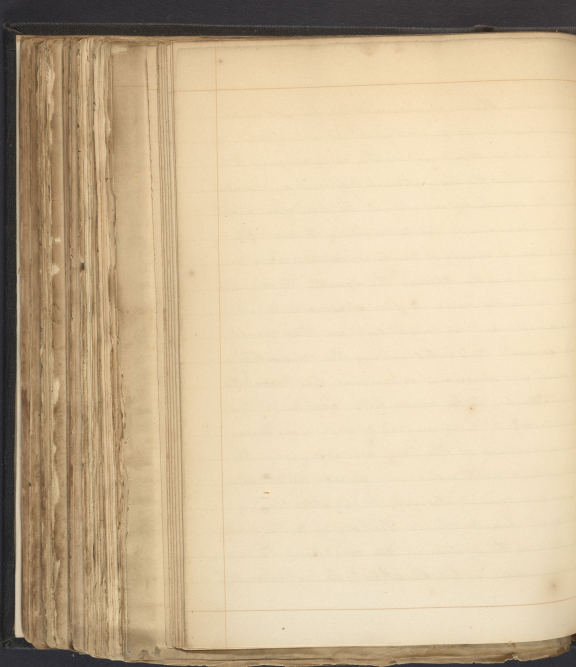
As the leading indication in the commencement



is to relieve the more formidable symptoms, we shall first consider that part of our subject.

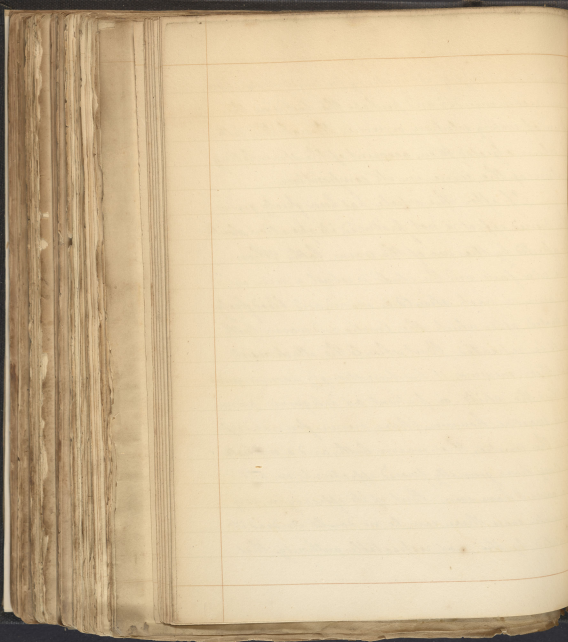
Called to a child in the early stage of the disease, where the respiration is difficult and laboured with the cough dry and shrill, the first object should be, to endeavour to excite vomiting. To meet this indication, a variety of Emetic substances have been recommended; as the Opium, the Squill, the Senega, &c. And as the disease is often spasmodic in its commencement, we might suppose these would answer well. Notwithstanding the plausibility of such an opinion, experience has proved the Emetic Tartar to be much better adapted to this complaint. It being insipid, as well as inodorous, the minuteness of the dose, and above all the promptness with which it operates, all conspire to recommend it strongly to our attention.

I ought here to observe that owing to the great torpidity of the system in this complaint, the doses of every article exhibited, should be proportionately



larger. Several ways of administering the Emetic Tartar, have been recommended, and perhaps the best is in the form of watery solution, or wine; though the latter has been objected to on account of the stimulating nature of the wine in its composition.

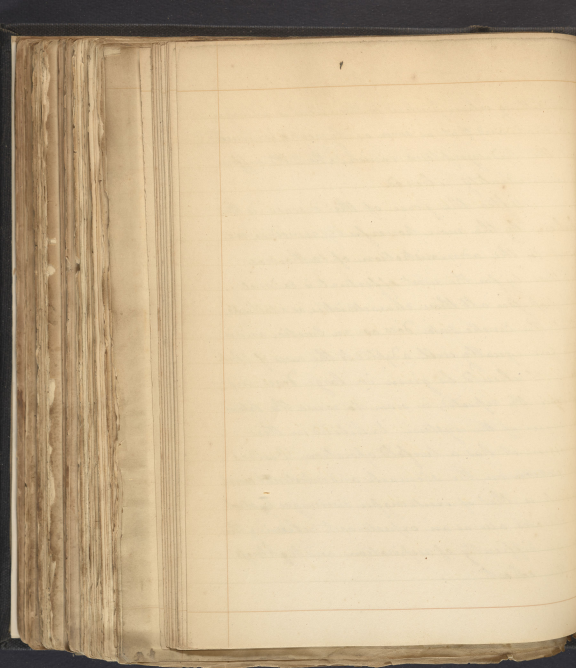
If after this article has been freely given, the desired effect is not produced, its operation should be assisted by the use of the warm bath. When this also fails and the child is robust, a vein in the arm or neck should be opened, and blood freely detached; after which the Emetic and warm bath are to be repeated. But should the attack resist all these measures, it has been strongly recommended to bleed the child, or patient *ad deliquium animi*. This practice however, I have never found necessary; the Emetic, the warm bath, and a moderate bleeding have generally proved effectual, in all the cases I have seen. But of its efficacy in very obstinate cases there can be no doubt. Indeed it is stated by the most respectable authority, that



blood letting when pushed to this extent is always effectual, and that as soon as Syncope is induced all the bad symptoms vanish, & the little sufferer is immediately relieved.

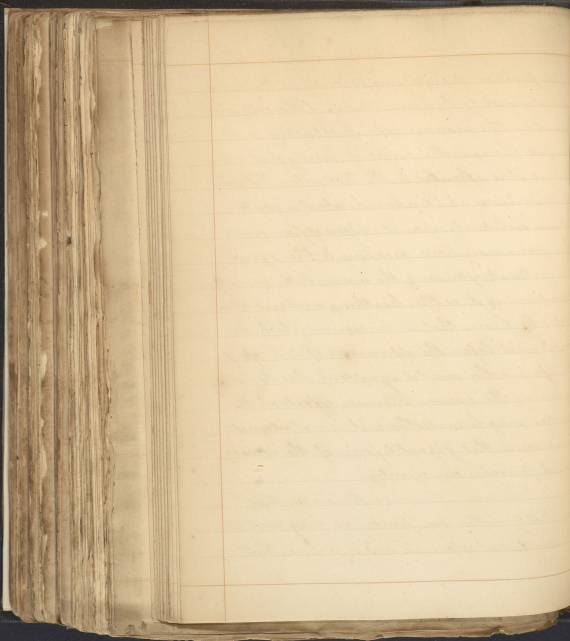
After the force of the disease is thus broken by the more powerful remedies, we resort to the administration of cathartics.

Of these by far the most effectual is calomel. It possesses all those characteristics, as a cathartic, that the Emetic Tartar does as an Emetic, and is therefore equally well adapted to the cases of children. It should be given in large doses and frequently repeated, in order to rouse the latent energies of the system. Exhibited in this manner it has a twofold operation. Besides its action on the stomach and intestinal canal, which is that of exciting free discharges by stool, it operates also as an expectorant, relieving the cough difficulty of respiration and tightness of the chest.



The practice of employing calomel in this disease was introduced by Dr. Adam Ruker of this city, who gave it in this manner after bloodletting and Emetics, though the credit of having first employed it is ascribed to Dr. Hamilton Professor of Midwifery at Edinburgh, who it is asserted depends exclusively upon it, in doses of from one to five grains every hour according to the age of the patient, after using the warm bath, gradually discontinuing it, as the breathing is relieved. It is stated by him, that in no case in which he employed it before the appearance of lividness of the lips, and other mortal symptoms, has he failed in curing the disease. However effectual this practice may be in Scotland, it is not adequate to overcome that gigantic form of the disease which pervades our country.

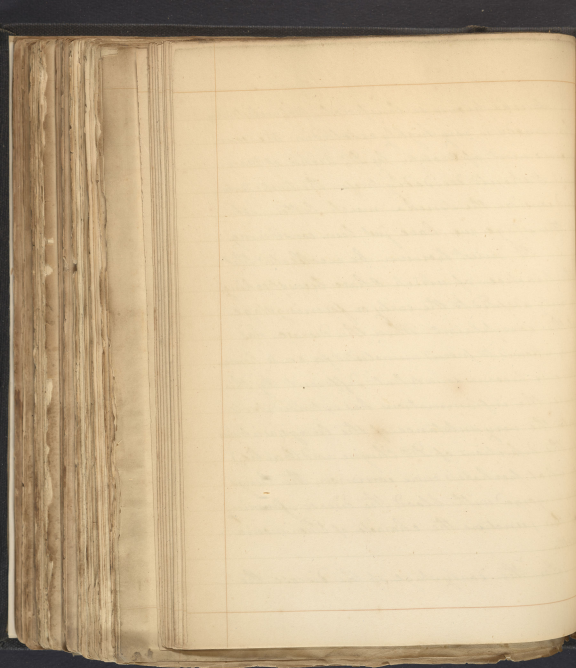
As soon as we have the disease thus completely within our power, we may resort to the use of expectorants, and it is here that



the Seneka proves so beneficial. Notwithstanding this remedy is very highly extolled in the commencement of Croup, by Dr Archer of Maryland, I should decidedly prefer the Emetic Pectoral and consider the Seneka much better adapted to the stage we have just been considering.

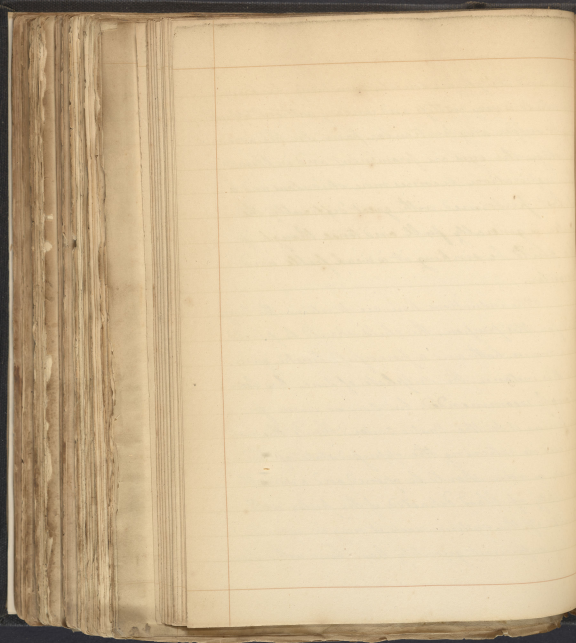
It must however be recollected that the practice of which I have been speaking, is only adapted to the early or forming stage of the complaint. When the disease has been allowed to proceed unmolested for 6 or 10 hours, the case becomes somewhat different. By this time, the inflammation has extended itself into the very substance of the lungs (as is proved by the dissections of Dr Cheyne and Baillie) or what perhaps is more common, the lungs are engorged with blood, the disease assuming at this juncture, the character of Pneumonia Notha.

In the early stage of the disease the



voice and cough are shrill, resembling barking, the child is very restless and uneasy without appearing to suffer any particular pain. In the advanced stage, the eyes are prominent and inflamed, the respiration becomes more stibulous and is at last performed with great difficulty; the pulse is generally full and tense, though if the child be sinking it is weak feeble and irregular.

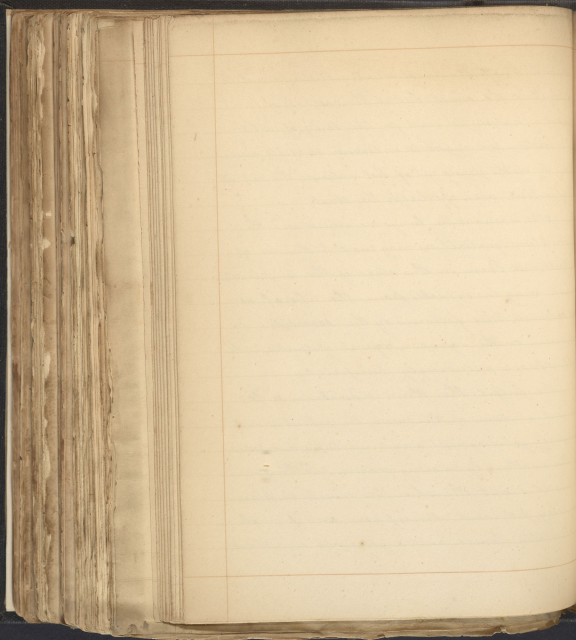
The indications here are to relieve the lungs, and for this purpose, the child should be placed in a warm bath and a powerful Emetic given. In this instance the sulphate of Zinc has been strongly recommended, but I see no reason for preferring it to the Emetic tartar. Should this not succeed in relieving the oppressed state of the lungs, a vein should be opened, and a small quantity of blood dehaeted, if the pulse will admit. If the system reacts, it may be repeated, until a sufficient quantity has been withdrawn.



Should this prove ineffectual, a blister must be applied to the chest, but if the case be of too urgent a nature to wait for the tardy operation of a blister, we ought to endeavour to excite respiration by cloths wrung out of hot water, or the oil of Turpentine, and applied to the chest.

As soon as the lungs are relieved and the circulation equalized, we may resort to the use of expectorants. Even in this stage of the complaint, much may be expected from the liberal use of calomel. This followed by the decoction of Seneka, or the syrup or syrup of squills, will often prove exceedingly beneficial.

To fulfil the third indication, or to prevent a return of the disease, the patient should carefully guard against any vicissitudes, or exposure to the weather, by wearing warm clothing, and flannel next the skin. He should be placed in a dry, pleasant atmosphere, and if much debilitated, tonics and a generous diet should



be recommended.

I cannot conclude this Essay, without offering to the Medical Professors in this University, my warmest acknowledgements, for the many advantages I have derived from their lectures. That they may all continue to enjoy that reputation which they now possess, as public teachers and private individuals, is my most ardent wish.

